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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/429,986	10/29/1999	YUJI YAMADA	7217/60017	6609

7590

05/10/2002

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EXAMINER

PENDLETON, BRIAN T

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 05/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/429,986

Applicant(s)

YAMADA, YUJI

Examiner

Brian T. Pendleton

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of Reference Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the pair of first filter means" in line 2. There is insufficient antecedent basis for this limitation in the claim. Examiner is examining the claim's merits as if there exists antecedent basis in parent claim 1.

Claim 6 recites the limitation "the detection means" in line 2. There is insufficient antecedent basis for this limitation in the claim. The claim is examined as though dependent on claim 5.

Claim 7 recites the limitation "the detection means" in line 2. There is insufficient antecedent basis for this limitation in the claim. The claim is examined as though dependent on claim 5.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1 and 4-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamada et al, US Patent 6,021,205. Yamada et al disclose a headphone device having n audio channels $2_1 - 2_4$, a pair of filters 16, 17 for converting the n-channel audio signals to two-channel signals, a pair of filters 30L and 30R which set different delay times for the two channel signals and inherently an output unit for headphone 7, meeting claims 1 and 8. Per claim 4, the pair of filters 16,17 are identical digital filters. As to claims 5 and 6, there is disclosed rotary angular velocity sensor 8 which controls the transfer functions of filters 30L and 30R. This sensor 8 is a piezoelectric vibration gyro 32, shown in figure 11. As to claim 7, see column 17, lines 24-26.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al in view of Ogawa et al, US Patent 5,742,688. Yamada et al disclose an audio processing apparatus having a pair of first filter means 16,17, a pair of second filter means 30L and 30R and an output circuit for a headphone 7. The second filter means 30L and 30R are phase difference addition circuits, which set different delay times in each of the channels to realize virtual rear sound sources. Yamada et al do not disclose that the circuits 30L and 30R are a pair of digital filters having a plurality of delay times, a multiplier for multiplying delayed signals by a coefficient and a summer for adding up all the delay signals. It was well known in the art of sound localization at the time of invention to use reverberation to increase the "feeling" of a reproduced sound. Specifically, reverberation was employed to increase the expansiveness of audio signals in a room. Thus, one would have been motivated to use such a technique in any sound localization device, such as described by Yamada et al. One process of reverberation is laid forth by Ogawa et al in figures 36A and 36B. Figure 36A illustrates a reflection generating unit (reverberator) which uses delay times 54, multipliers 55 and adder 56. The reflections are generated as in figure 36B. Reverberators 393,394 used in combination with the FIR filters 361-364 create a fuller sound effect. As taught in column 34 lines -9, the reflection sounds emphasize a surround sound. Hence, it would have been obvious to one of ordinary skill in the art to modify the Yamada et al invention to include the digital reverberators of Ogawa et al in lieu of the circuits 30L and 30R.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fujinami, US Patent 5,974,152; Serikawa et al, US Patent 5,796,845; Matsumoto et al, US Patent 5,381,482.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (703) 305-9509. The examiner can normally be reached on M-F 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



Brian Tyrone Pendleton
April 25, 2002



FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER
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